

WHAT IS CLAIMED IS:

1. A liquid ejection head comprising:

a plurality of liquid ejection units each of which includes a flow path unit formed by a laminated structure provided with a nozzle plate on which a nozzle array aligning nozzle openings is formed,

a flow path forming plate in which a pressure generating chamber communicating with the nozzle opening, and

a sealing plate for closing an opening of the pressure generating chamber; and

a head holder to which said liquid ejection units are attached for guiding a liquid from a liquid supply source;

wherein said liquid ejection units includes

at least two of first liquid ejection units that are aligned so that the respective nozzle arrays are aligned in a first direction, and each of which has a first length in the first direction,

a second liquid ejection unit having a second length in the first direction shorter than the first length,

the second liquid ejection unit is arranged at a discontinuous portion of the nozzle arrays between two adjacent ones of the first liquid ejection units in a state of being shifted from an alignment of the first liquid ejection units in a second direction,

whereby a single unit of the liquid ejection units is

constituted by the first liquid ejection units and at least one of the second liquid ejection unit such that the respective nozzle arrays constitutes a single nozzle group for ejecting the same kind of a liquid.

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2. The liquid ejection head according to Claim 1, wherein two single units of the liquid ejection units are provided so that the respective second liquid ejection units in said two single units of the liquid ejection units overlap each other  
10 in a direction orthogonal to the first direction in a state of shifting the two units of the liquid ejection units in the first direction.

3. The liquid ejection head according to Claim 1, wherein  
15 an opposed unit is formed by opposingly arranging at least two single units of the liquid ejection units in a state of being shifted from each other in the first direction to thereby arrange the respective second liquid ejection units in said at least tow single units substantially on a same row.

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4. The liquid ejection head according to Claim 3, wherein a plurality of the opposed units are arranged.

5. The liquid ejection head according to Claim 1, wherein  
25 the single unit includes at least one third liquid ejection

unit having a third length for extending a total length of the nozzle group of the single unit by a predetermined length, and

the nozzle group is constituted by the respective nozzle arrays of the first, the second and the third liquid ejection  
5 units.

6. The liquid ejection head according to Claim 5, wherein at least one of the third liquid ejection unit is arranged substantially in a row the same as the row of the second liquid  
10 ejection unit.

7. The liquid ejection head according to Claim 6, wherein at least one of the third liquid ejection unit is arranged at a row substantially the same as a row of the first liquid  
15 ejection unit.

8. The liquid ejection head according to Claim 7, wherein the third length of the third liquid ejection unit and the second length of the second ejection unit are substantially  
20 the same.

9. The liquid ejection head according to Claim 6, wherein end portions of the nozzle groups between a plurality of the single units are aligned substantially on a straight line in  
25 the second direction by the third liquid ejection unit.

10. The liquid ejection head according to Claim 2, wherein the nozzle arrays of the single units contiguous to each other in view from the second direction are arranged such that an opening pitch of the nozzle array of other of the single units is shifted from an opening pitch of the nozzle array of one of the single units and an amount of the shift is an amount of a half of the opening pitch.

11. The liquid ejection head according to Claim 1, wherein the head holder is provided with a projected portion for positioning at least one of the first liquid ejection unit, the second liquid ejection unit and the third liquid ejection unit.

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12. The liquid ejection head according to Claim 1, wherein the head holder is provided with an outer peripheral wall member for positioning at least one of the first liquid ejection unit, the second liquid ejection unit or the third liquid ejection unit.

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13. The liquid ejection head according to Claim 1, wherein the liquid ejection units are constituted by bonding the flow path units to the head case, and

25 a pressure generating element for producing a pressure

variation in the pressure generating chamber is constituted by a piezoelectric oscillator of a vertical oscillation mode, the piezoelectric oscillator is fixed to a fixing board, the piezoelectric oscillator and the fixing board are inserted  
5 into a containing chamber provided at the head case in a state of corresponding to the pressure generating chamber and the fixing board is brought into a fixed state at inside of the containing chamber.